

## Notes and Comments

### Technical Note: Uto-Aztecans Premolars in Ohio Valley Populations

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Morris et al. (1978) described a morphological variant of the permanent maxillary anterior premolar limited to Native Americans which they termed the "Uto-Aztecans premolar": "[The Uto-Aztecans premolar] is characterized by marked buccolingual expansion of the buccal cusp, the paracone, of the first premolar. The paracone is much broadened distally and the distal portion possesses a large, characteristic fossa. A lobular ridge, at times equal in size to the paracone's distal occlusal border, connects the paracone apex with the distal occlusal border, intersecting the border at the distal terminus of the sagittal sulcus. This ridge could be thought of as a hypertrophied medial occlusal paracone ridge if not for its distal positioning. The fossa lies between the latter ridge and the true distal occlusal border of the paracone" (Morris et al. 1978:70). These authors hypothesized that the geographical distribution of this variant among Native Americans in the southwestern regions of North America could best be explained by considering it a morphological marker limited to but not expressed in all Uto-Aztecans and possibly Tanoan-speaking populations. However, more recent investigations have shown that this variant is or has been expressed in a variety of western North American Native populations (Turner et al., 1991; Turner, personal communication). We report here a further expansion of the geographical distribution of this variant among northeastern North American populations at most only remotely related to the Native American populations noted above.

We have noted the presence of the Uto-Aztecans premolar (or distosagittal ridge) in three prehistoric Native American populations from the Ohio Valley region (Fig. 1A). These populations are from The Hopewell site (33RO27) in Ross County, Ohio, the Proctorville site (33LE12) in Lawrence County, Ohio, and the Buffalo site (46PU31) in Putnam County, West Virginia. The Hopewell site is temporally the earliest of the three sites, being the type site for the Middle Woodland (ca. 2100–1500 BP) Ohio Hopewell cultural manifestation (Caldwell and Hall, 1964). One individual from the Hopewell site, burial 25 from mound 25, expresses the Uto-Aztecans premolar unilaterally.

The Proctorville and Buffalo sites are both Late Prehistoric, Fort Ancient villages separated by only about 45 km. The individuals examined from the Buffalo site appear to date to an occupation between approximately 350 and 300 BP (Metress, 1971). Although 642 individuals are available for study from the Buffalo site, only 176 possess maxillary anterior premolars. Nevertheless, three individuals express the Uto-Aztecans premolar, two unilaterally and in one individual who lacks the antimere.

The Proctorville site, probably dating to between 500 and 400 BP (Griffin, 1966), was originally excavated in 1934, and the 32 individuals recovered at that time have been lost. In 1989 the Ohio Historical Society (Columbus, OH), as part of a salvage operation, collected remains of at least three additional individuals from the site. One of these individuals (A4197) expresses the Uto-Aztecans premolar bilaterally. Figure 1B is a simplified drawing of the right premolar from this individual.

Table 1 contains the frequencies of the Uto-Aztecans premolar in the three samples noted above and in four comparative Late

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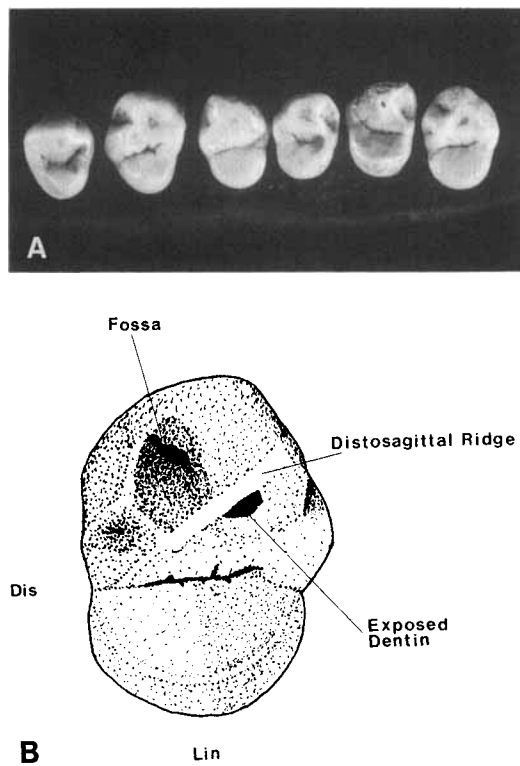


Fig. 1. **A:** the distosagittal ridge in Prehistoric Ohio Valley populations. From left to right: Buffalo E11-21 (L); Buffalo E10-34 (R); Hopewell mound B.25 (R); Buffalo E11-7 (L); Proctorville A4197 (L); Proctorville A4197 (R). **B:** simplified line drawing of A4197 (R) showing the distosagittal ridge and the large characteristic fossa. This tooth is tilted slightly towards the mesial. Dis, distal; Lin, lingual.

TABLE 1. Frequencies (based on the individual count method of Turner and Scott [1977] of the distosagittal ridge of the maxillary anterior premolar in Prehistoric Ohio Valley Native American populations

Samples	N	% distosagittal ridge
Hopewell (ca. 2100–1500 BP)	41	2.4
Pearson (ca. 850–750 BP)	79	0.0
Sunwatch (ca. 750 BP)	22	0.0
Anderson (ca. 700 BP)	18	0.0
Monongahela (ca. 850–350 BP)	54	0.0
Proctorville (ca. 500–400 BP)	35 <sup>1</sup>	2.9
Buffalo (ca. 350–300 BP)	176	1.7

<sup>1</sup>Assuming all 32 of the original individuals lacked a distosagittal ridge.

Prehistoric samples from Ohio and western Pennsylvania (Monongahela). It is obvious from these data that, as among Southwestern populations, the Uto-Aztecan premolar

is a rare variant in Ohio Valley populations. The total frequency of this variant among Ohio Valley populations, 1.2% (N = 425), is very similar to the frequency observed among Uto-Aztecan-Tanoan and presumed Uto-Aztecan-Tanoan speakers, 1.1% (N = 888) (Morris et al., 1978). Because there is no evidence that any native Ohio Valley population spoke Uto-Aztecan or Tanoan languages and because this morphological variant has been found to occur more widely in Native American and Asian-derived populations (Turner et al., 1991; Turner, personal communication), we suggest that this variant is probably a rare, primitive feature among Native Americans. Since this variant does not appear to be limited to Uto-Aztecan speakers, the term *distosagittal ridge* (Turner et al., 1991) seems to be a more appropriate as well as a more accurate description of the variant. As a probable primitive Native American variant, the utility of this trait in Asian-derived populations in general will be found primarily in investigations of the origins and affinities of Native Americans, rather than in investigations of the biological dynamics of specific language groups within North America.

LITERATURE CITED

Caldwell JR, and Hall RL (1964) Hopewellian Studies. Illinois State Museum Scientific Papers, Vol. 12. Springfield: Illinois State Museum.

Griffin JB (1966) The Fort Ancient Aspect: Its Cultural and Chronological Position in Mississippi Valley Archaeology. Ann Arbor: University of Michigan Museum of Anthropology, Anthropological Papers No. 28.

Metress J (1971) An Osteobiography of the Buffalo Site, Fulton (Putnam) County, West Virginia. Ph.D. dissertation, Indiana University (Bloomington).

Morris, DH (1967) Maxillary premolar variation among the Papago Indians. J. Dent. Res. 46:736–738.

Morris DH, Hughes SG, and Dahlberg AA (1978) The Uto-Aztecan premolar: The anthropology of a dental trait. In PM Butler and KA Joysey (eds.): Development, Function, and Evolution of the Teeth. London: Academic Press, pp. 69–79.

Turner CG, and Scott GR (1977) Dentition of Easter Islanders. In AA Dahlberg and TM Graber (eds.): Orofacial Growth and Development. The Hague: Mouton, pp. 229–249.

Turner CG, Nichol CR, and Scott GR (1991) Scoring procedures for key morphological traits of the permanent dentition: The Arizona State University dental anthropology system. In MA Kelley and CS Larsen (eds.): Advances in Dental Anthropology. New York: Wiley-Liss, Inc., pp. 13–31.